

Computing Educators Oral History Project

***Moti Ben-Ari* video snippet transcript**

Recorded Tuesday, July 1, 2008

Available both via the ceohp.org website and on CEOHP's YouTube channel
<http://www.youtube.com/user/CEOHP#p/u/19/1uuLBrrSg-E>

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We recommend that this video transcript be cited as follows:

Moti Ben-Ari, "The value of a broad education," a video interview from 2008, Computing Educators Oral History Project. Online: ceohp.org.

The value of a broad education

Hello, I'm Moti Ben-Ari and I appreciate your interest in my oral history. I'd like to tell you about an event that happened when I worked as a software engineer on a flight control project. It is not hard to see that an airplane can rotate in three dimensions. One of the computational tasks in flight control is to transform the position of an aircraft after an arbitrary rotation. The computations can be done using trigonometry, but this has numerical and physical problems. It can be done more efficiently and with greater stability using quaternions, which are a generalization of complex numbers sometimes called imaginary numbers, as if they didn't really exist. My software group was called upon to implement the algorithms, but since I never like doing things I don't understand, I spent a couple of days in the library learning about quaternions. I wrote a report explaining the details of the algorithms and why they work. The aeronautical engineers later told me that they, too, found the report useful. Computer science is a fascinating profession because you get to be involved in the applications themselves — in this case, aeronautics. Don't limit your studies just to computer science, learning about software systems. I suggest that you learn the basic and stable principles of computer science together with an application area in science or engineering. You'll never regret having a broad education.